Destron Fearing™

Model AXIZ SB-1™ User Manual

Release: Revision A

Software Version: 1.00

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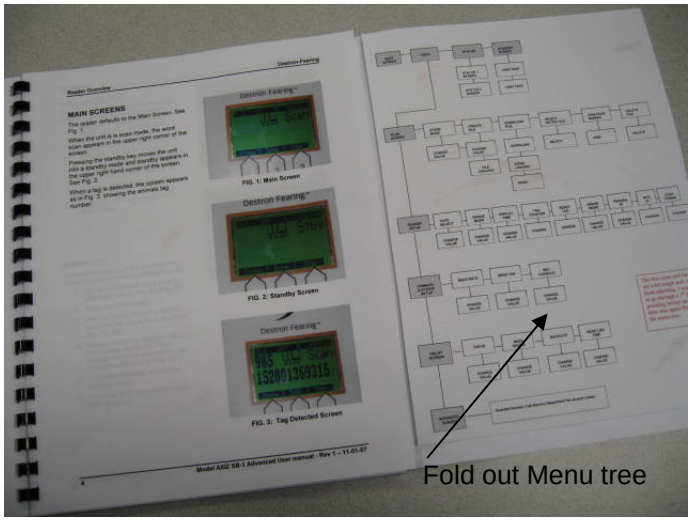
Document History

Release Date	Doc Version	Software Version	Comments
March 12, 2008	Revision A	1.00	Cleanup and corrections.
October 19, 2007	Preliminary Draft	1.00	Initial release of this manual.

READ THROUGH THIS ENTIRE MANUAL BEFORE INSTALLING AND OPERATING YOUR UNIT. FOLLOW ALL STEPS EXACTLY.



Fold Out Menu Tree

To aid you in learning the screens, an 11” x 17” fold out Menu Tree is located on the last page of this manual. You are encouraged to refer to it while you are paging through the manual and learning to navigate the screens of your Reader. Continue referring to it until you are familiar with all screen locations.

.

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MAIN FEATURES

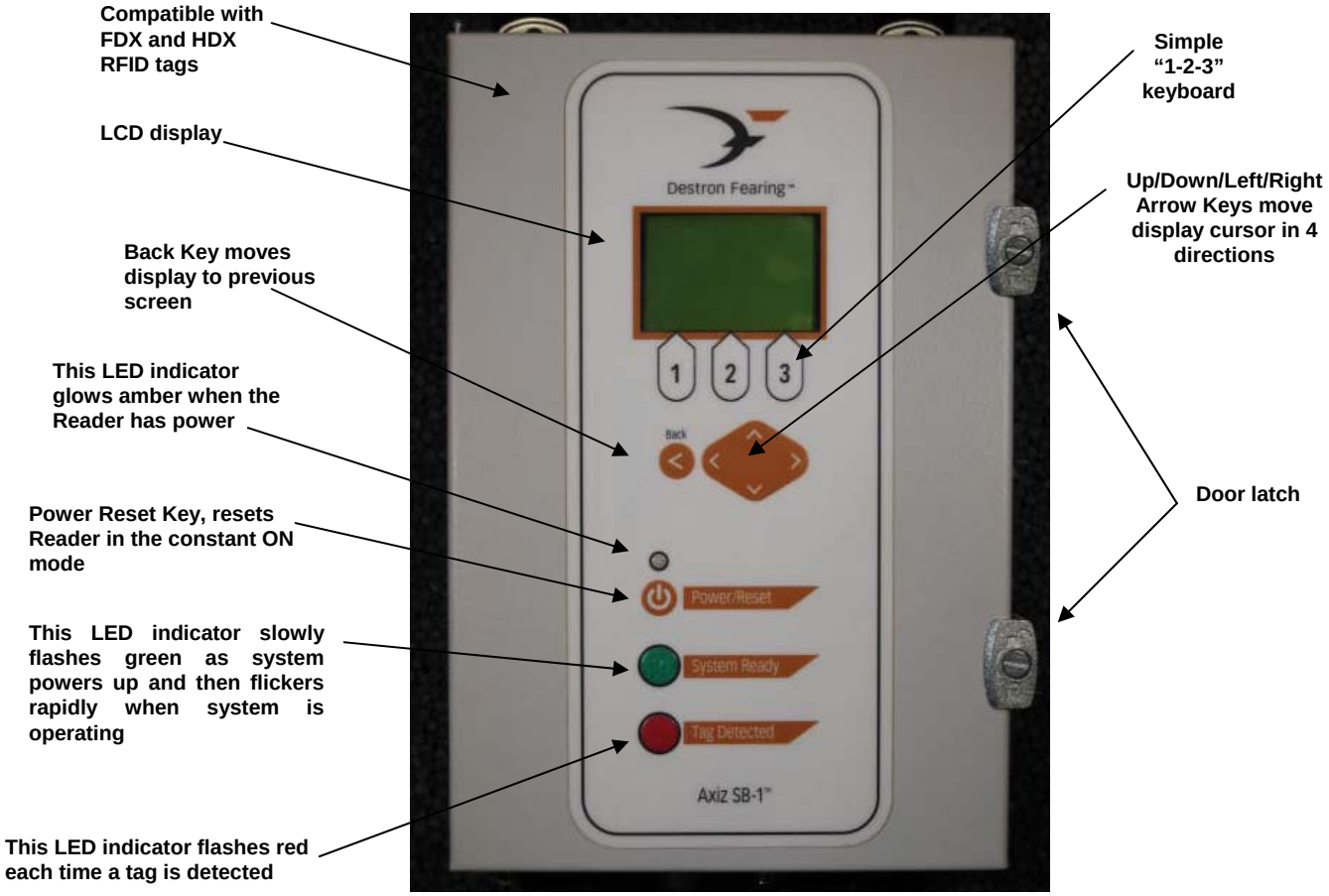

Figure 1: External View of the Model AXIZ SB-1™

PRODUCT DESCRIPTION

The AXIZ SB-1™ is a powerful, high speed ISO compliant stationary Reader designed for harsh environments where read speed and distance are critical. It is ideal for electronically scanning moving animals in a walk-way design. The Reader may be used to drive multiple antenna configurations, such as pass-by panel arrays and walk-through antennas. It uses master/slave synchronization to allow multiple readers to be connected at a single facility. Dual port communication allows for two separate systems to monitor without interfering with data capture software.

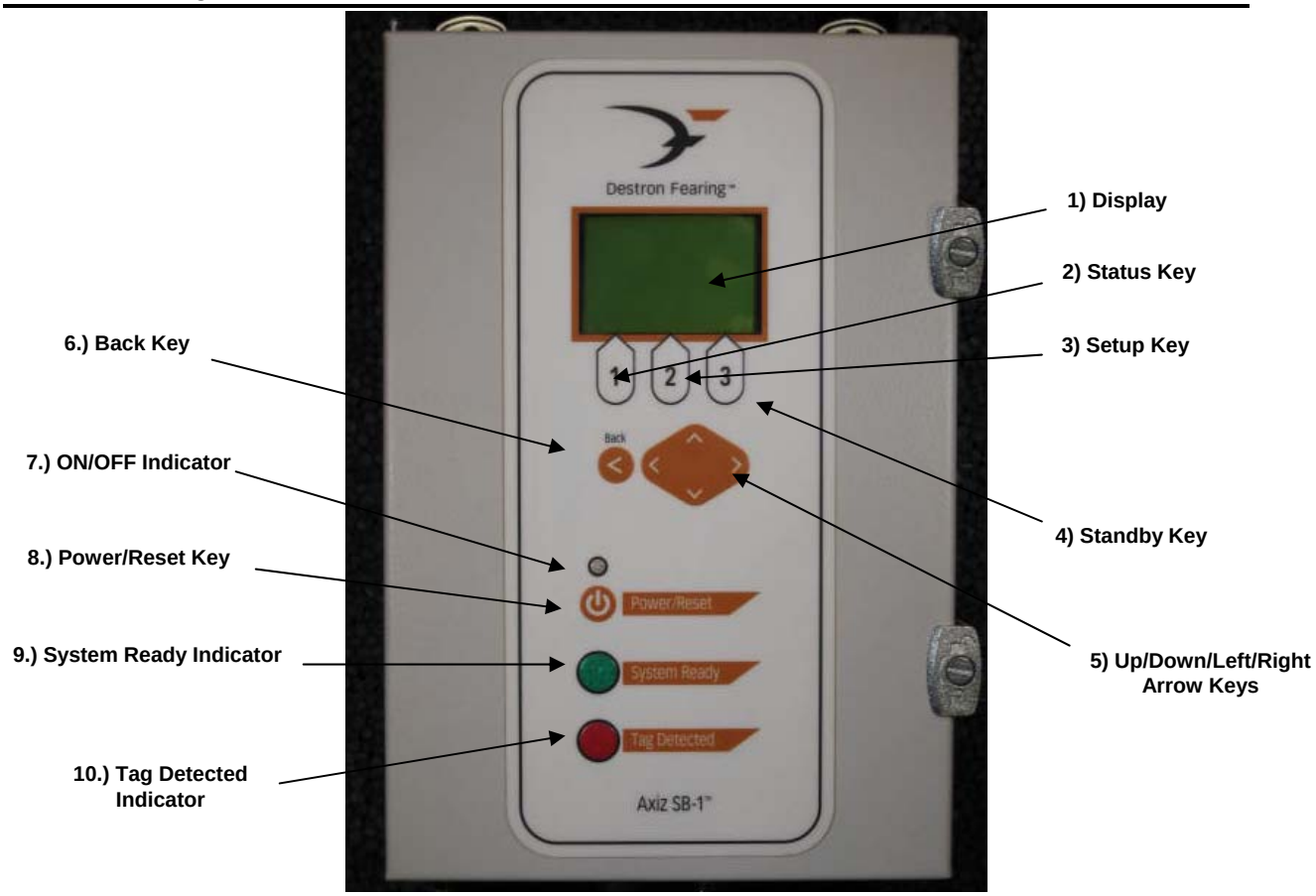

FIG. 2: Control Panel Component Identification

CONTROL PANEL COMPONENT IDENTIFICATION

1. **Display:** LCD Display.
2. **Status Key:** Pressing this key enables the operator to check the status of current reader settings.
3. **Setup Key:** Pressing this key enables the operator to change current reader parameters.
4. **Standby Key:** Pressing this button moves the reader into a standby mode.
5. **Up/Down/Left/Right Arrow Keys:** Moves the cursor around the display.
6. **Back Key:** Moves the display to the previous screen.
7. **On/Off Indicator:** This LED glows solid amber when power is turned on to the unit.
8. **Power/Reset Key:** Pressing this key turns the unit on or resets the Reader when it's in constant ON mode.
9. **System Ready Indicator:** This LED indicator slowly flashes green as the system powers up, then flickers rapidly when the system is up and operational.
10. **Tag Detected Indicator:** This LED indicator flashes red each time a tag is detected.

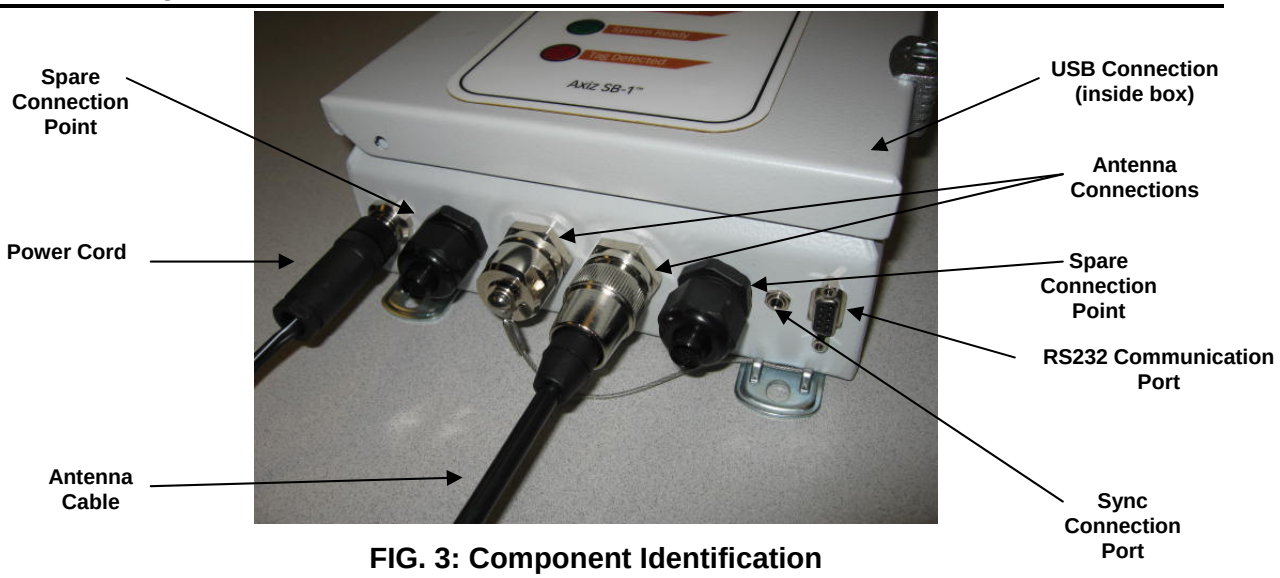

FIG. 3: Component Identification

COMPONENT IDENTIFICATION (CONTINUED)

Antenna Connection/Cable: Two antenna connections are located in the center, on the bottom of the Reader.

RS232 Communication Port: A RS232 communication port is located on the bottom of the Reader in the right corner.

Power Cord Connection Point: The power cord attaches at this connection point.

Sync Connection Port: A mini USB connection is located inside the Reader's housing in the lower left corner. Contact Destron Fearing for assistance in installing cable.

Spare Connection Points: Two spare connection points are included for additional applications. Contact Destron Fearing for assistance in installing cable.

SPECIFICATIONS

Item	Description
Approvals	FCC approval pending AC power supply is UL approved
Construction	NEMA 4x, IP66 rated aluminum box
RFID Acquisition	All ISO-compliant FDX, & HDX technologies
Read range	Up to 4 feet. at optimal tag orientation. User environment and antenna configuration may affect read range
Memory	Ability to create up to 99 individual files (depending on the software version) and to store up to 16,500 RFID tag numbers
Display	Internal high intensity lamps that display reader power, scan mode, and successful tag read Internal LCD backlight display
Tuning	Automatic or Manual
Temperature Range	Operating: -22F to +158F (-30C to70C)
Humidity	10%-90% non-condensing
Power	100-240 VAC, 47-63 Hz, Optional 12VDC external battery connection
Interface	Individual RS232, RS485, serial ports, and USB ports Optional Bluetooth wireless communication Communications port speed adjustable from 2400bps to 57,600bps
Weight	11 lbs. (4.99kg)
Dimensions	12”L x 8”W x 4”D (30cm x 20cm x 9cm)

FIG. 4: Mounting Brackets

ASSEMBLY / INSTALLATION

1. Remove Reader and all items from the shipping carton.
2. Check for correct shipment of items.
3. Locate area to mount the Reader. Locate the four mounting brackets on each corner of the Reader. See Fig. 4 and 5. The Reader should be mounted on a vertical surface within 12 feet of a grounded power source. ***NOTE: The power cord is 12 ft. long.***
4. Install the power cord and plug power cord into power source. See Fig. 5. ***NOTE: The power cord plugs into the mounting socket at first, then screws to lock in place.***
5. Install the antenna cable. See Fig. 5. ***NOTE: The antenna cable plugs into the mounting socket at first, then screws to lock in place. There are two identical antenna sockets on the bottom of the Reader. NOTE: It does not matter which socket you use.***
6. Mount the antenna.
7. If desired, a computer can be connected to the Reader using a RS232 cable. The RS232 connector point is located on the bottom right corner of the Reader. See Fig. 5. The RS232 connection also has a powered #9 pin for powering a Bluetooth wireless device if desired.

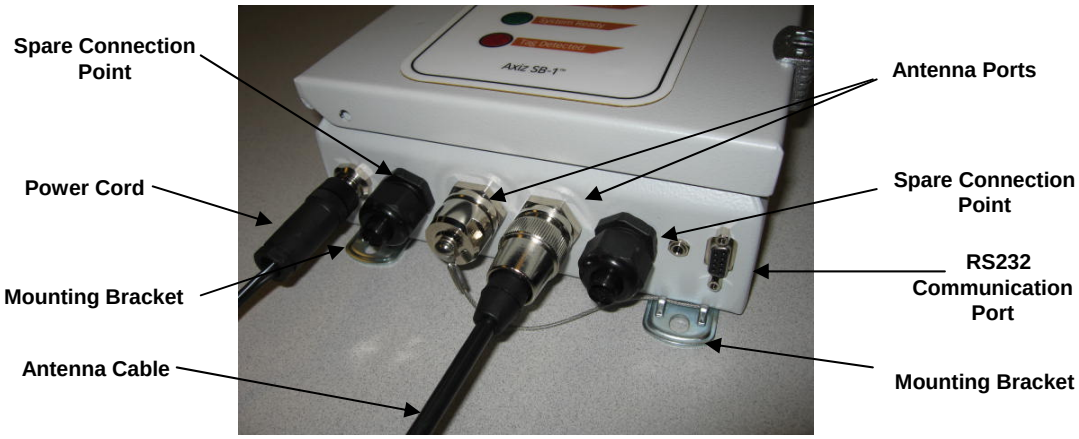

FIG. 5: Cable Connections

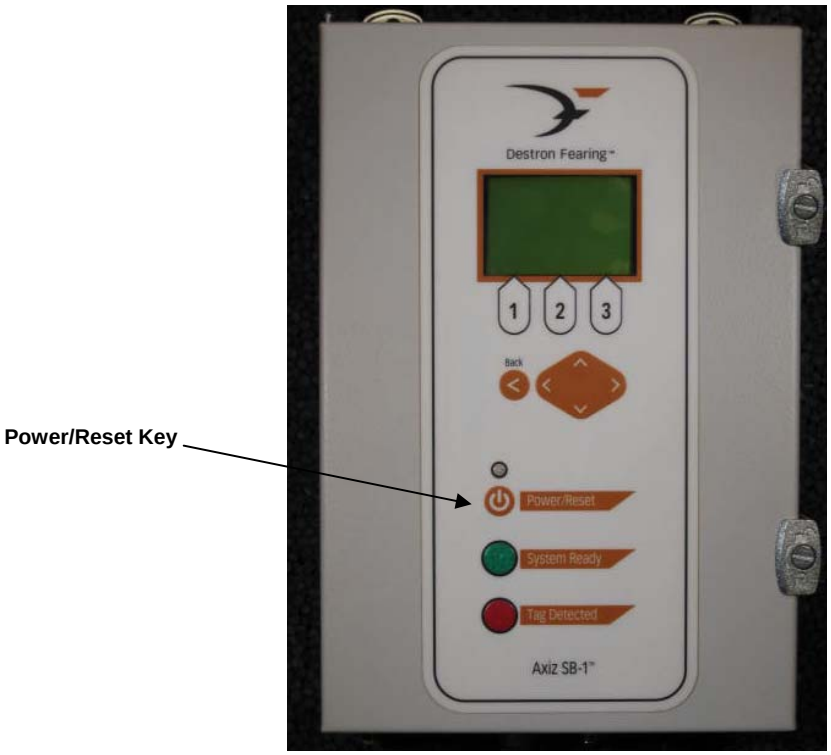

FIG. 6: Power/Reset Key

OPERATING INSTRUCTIONS

1. Insure that the antenna cable is connected.
2. Insure that the RS232 or USB cable is connected as needed.
3. Press the POWER/RESET Key.
4. Use display as required for the following functions:
    - Scan tags. See page 10.
    - View tags. See page 11.
    - Check miscellaneous status items of Reader. See page 12.
    - Create, download, store, delete and view files. See page 14-21.
    - Reader set up. See page 22-32.
    - Communication ports set up. See page 33-36.
    - Change display, beep sound, display, backlighting, and Tag ID. See page 37-41.

MAIN SCREEN

The reader defaults to the Main Screen. See Fig. 10.

When the unit is is Scan Mode, the word “Scan” appears in the upper right corner of the screen.

Press the STANDBY Key to move the unit into a Standby Mode. See Fig. 11.

When a tag is detected, the screen appears as shown in Fig. 12, exibiting the animals tag number.

The second line contains bins showing received signal levels and antenna current.

FIG. 10: Main Screen

FIG. 11: Standby Screen

FIG. 12: Tag Detected Screen

MAIN SCREEN (continued)

VIEW TAGS

Use this function to view the stored tags within the file.

Complete this as follows from the Main Screen:

1. Press the STATUS Key and the "Status 1 Screen" will appear. See Fig.13.
2. Press the VIEW TAGS Key and the files will show the tag numbers stored. See Fig. 14.

Note: Tags may also be viewed in the Status 2 Screen by pressing the VIEW TAGS Key.

3. Press the BACK Key to return to the previous screen.
4. Press the EXIT Key to return to the Main Screen.

FIG. 13: Status 1 Screen

FIG. 14: View Tags Screen

MAIN SCREEN (continued)

STATUS SCREENS

1. Pressing the Status Key on the Main Screen displays the Status 1 Screen. See Fig. 15.
2. The Status 1 Screen lists current status information on the Reader. See Fig. 16.
3. Pressing the PAGE 2 Key displays the Status 2 Screen showing additional status information on the Reader. See Fig. 18.
4. Pressing the BACK Key displays the previous screen.
5. Pressing the EXIT Key returns the display to Main Screen.

VIEW TAGS

1. In either the Status 1 or 2 screens, pressing the VIEW TAGS Key displays a list of recent tags. See Fig. 17.
2. Pressing the BACK Key displays the previous screen.
3. Pressing the EXIT Key returns the display to Main Screen. See Fig. 15.

FIG. 17: View Tags Screen

FIG. 15: Main Screen

FIG. 16: Status 1 Screen

FIG. 18: Status 2 Screen

MAIN SCREEN (continued)

USER SET UP SCREENS

Press the SET UP Key on the Main Screen to display the User Set Up Screen. See Fig. 22-23.

In the User Set Up Screen you have the following five options.

Note: These screens will be discussed in detail on the following pages:

1. Files – Accessing this area allows you to store, create, download and view files.

2. Reader Set Up – Accessing this area allows you to change current Reader settings.

3. Communication Set Up – Accessing this area allows you to change current communication settings.

4. Display – Accessing this area allows you to change current display settings.

5. Advanced Set Up - This area is access guarded. Contact Destron Fearing to gain access to the Advanced Setup Menu.

FIG. 22: Main Screen

FIG. 23: Set Up Screen

USER SET UP SCREENS

FILES SCREEN

Use this function to store, create, download, select active files, delete files and view files. Complete this as follows:

1. Press the SET UP Key on the Main Screen. See Fig. 24.
2. Select FILES using the UP/DOWN Keys. See Fig. 25.
3. Press the ENTER Key. The Files Screen will appear. On this screen you have 6 areas that can be accessed. See Fig. 26
    - Store Mode
    - Create a File
    - Download a File
    - Select Active File
    - View Files
    - Delete a File

These functions will be discussed in detail on the following pages.

FIG. 24: Main Screen

FIG. 25: User Set up Screen

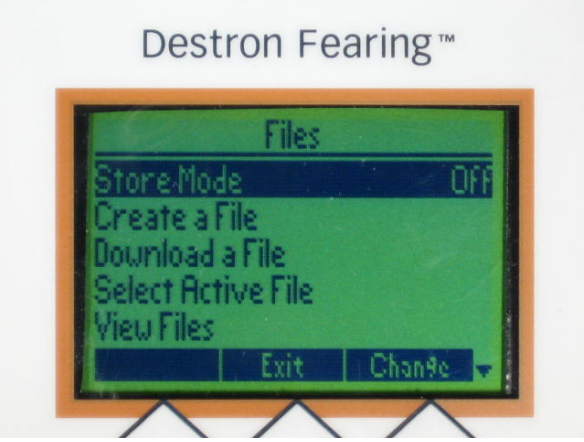

FIG. 26: Files Screen

FIG. 29: Store Mode Screen with Unique Selected

FILE SCREENS (continued)

STORE MODE FILE SCREENS

Use this function to change the mode of storing files from ID, All, Unique or Off settings.

Complete this as follows from the File Screen:

1. Press the UP/DOWN Arrow Keys until you have highlighted the "Store Mode" line. See Fig. 26.
2. Press the CHANGE Key. See Fig. 26. This will bring up the "Change Value Store Mode" Screen. It will list the current store mode value. See Fig. 28.
3. Use the UP/DOWN Arrow Keys and select the ID, All, Unique or Off mode. See Figs. 27, 28, 29, 30.
4. Press the CONFIRM Key to lock in the new setting. See Figs. 27, 28, 29, 30.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

FIG. 27: Store Mode Screen with ID Selected

FIG. 28: Store Mode Screen with All Selected

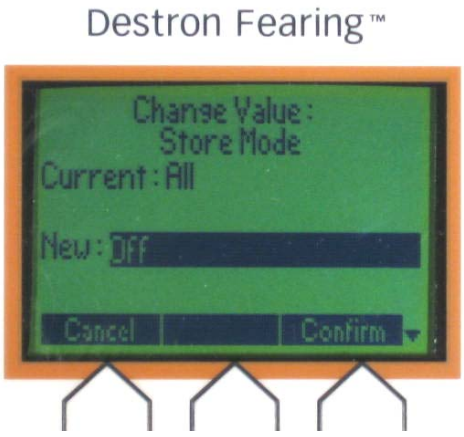

FIG. 30: Store Mode Screen with Off Selected

FIG. 33: Change Value Screen

FILES SCREEN (continued)

CREATE A FILE SCREENS

Use this function to create new files.

Complete this as follows:

1. From the Main Screen, press the SETUP Key.
2. Press the UP/DOWN Arrows until you highlight the Files line.
3. Press the ENTER Key.
4. The Files Screen appears. See Fig. 31. Press the UP/DOWN Arrow Keys and highlight Create a File.
5. Press the ENTER Key. The “Create a File” Screen appears. See Fig. 32. Press the UP/DOWN Arrow Keys and select Create a File.
6. Press CREATE if you want to create the file or press CHANGE if you want to change the file name. If you selected Create a File, a “File Created” dialogue box will appear. See Fig. 34. If you selected Change, a “Change Value” Screen will appear. See Fig. 33. Press the LEFT/RIGHT Arrow Keys to select a letter. Use the UP/DOWN Arrow Keys to select new letters. See Fig. 33.
7. Once the new file name has been completed, press the CONFIRM Key to change the name of the file.

FIG. 31: Files Screen

FIG. 32: Create the File Screen

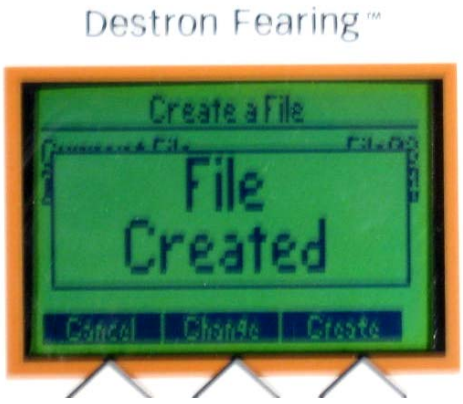

FIG. 34: File Created Screen

FILES SCREENS (continued)

DOWNLOAD FILE SCREENS

Use this function to download a file to a computer connected to the Reader.

Complete this as follows from the Main Screen:

1. Press the SETUP Key on the Main Screen.
2. Press the UP/DOWN Arrow Keys and highlight the Files line.
3. Press the ENTER Key and the Files Screen will appear.
4. Press the UP/DOWN Arrow Keys and highlight “Download a File”. See Fig. 35.
5. Press the ENTER Key.
6. This gives you three options: Download Current File, Download All Files, Specific File. See Fig. 36.

FIG. 35: Files Screen

FIG. 36: Download a File Screen

DOWNLOAD CURRENT FILE

Complete this as follows:

1. Press the UP/DOWN Arrow Keys and highlight DOWNLOAD CURRENT FILE. See Fig. 36.
2. Press the OK Key. A “Done” Dialog Box appears when the current file has been downloaded. See Fig. 38.
3. Press the BACK Key to return to the previous screen.
4. Press the EXIT Key to return to the Main Screen.

FILES SCREENS (continued)

DOWNLOAD ALL FILES

To download all files complete the following steps:

1. Press the UP/DOWN Arrow Keys to highlight the Download All Files line. See Fig. 36.
2. Press the OK Key. A downloading file dialog box will appear on the screen.
3. When complete a “Done” Dialog Box will appear on the screen. See Fig. 38.
4. Press the BACK Key to return to the previous screen.
5. Press the EXIT Key to return to the Main Screen.

SPECIFIC FILE:

To download a specific file, complete the following steps:

1. Use the UP/DOWN Arrow Keys to highlight the specific file. See Fig. 36.
2. Press the ENTER Key.
3. Use the UP/DOWN Arrow Keys to highlight the file you want downloaded. See Fig. 37.
4. Press the DOWNLOAD Key. See Fig. 37. A “Done” Dialogue Box will appear when completed. See Fig. 38.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

FIG. 37: Select a File Screen

FIG. 38: Done Screen

FILES SCREENS (continued)

SELECT ACTIVE FILE SCREENS

Use this function to select an active file and open it for viewing.

Complete this as follows:

1. Use the UP/DOWN Arrow Keys to highlight the “Select Active File” line. See Fig. 39.
2. Press the ENTER Key.
3. Use the UP/DOWN Arrow Keys to highlight the desired file. See Fig. 40.
4. Press the SELECT Key. An asterisk appears after the file name. See Fig. 40.
5. Press the VIEW Tags Key and the tags in that file will be displayed.
6. Use the UP/DOWN Arrow Keys to view the all of tags in that file.
7. Press the BACK Key to return to the previous screen.
8. Press the EXIT Key to return to the Main Screen.

FIG. 39: Files Screen

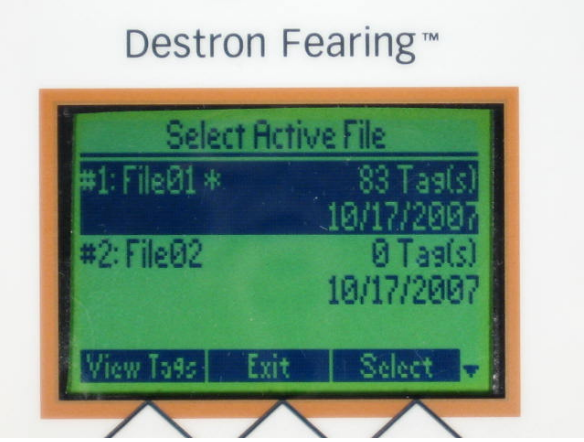

FIG. 40: Select File Screen

FILES SCREENS (continued)

VIEW FILES SCREENS

Use this function to view the miscellaneous stored files in the system.

Complete this as follows from the Files Screen:

1. Use the UP/DOWN Arrow Keys and highlight the “View Files” line. See Fig. 41.
2. Press the ENTER Key. See Fig. 41. This will bring up the list of stored files.
3. Use the UP/DOWN Arrow Keys to scroll to view the files stored in the system. See Fig. 42.
4. Press the BACK Key to return to the previous screen.
5. Press the EXIT Key to return to the Main Screen.

FIG. 41: Files Screen

FIG. 42: View Files Screen

FILES SCREENS (continued)

DELETE A FILE

Use this function to delete the miscellaneous stored files in the system.

Complete this as follows from the Files Screen:

1. Use the UP/DOWN Arrow Keys and highlight the “Delete a File” line. See Fig. 48.
2. Press the ENTER Key. See Fig. 48.
3. This brings up the “Delete a File” Screen with three options: See Fig. 49.
   - Delete Current File
   - Delete All Files
   - Specific File
4. Select the desired option using the UP/DOWN Arrow Keys. See Fig. 49.
5. Select the File to delete using the UP/DOWN Arrow Keys. See Fig. 50.
6. Press the DELETE or OK Key (depending on which option was selected). See Figs. 49 and 50.
7. A “File Deleted” Dialogue Box appears when the file is deleted. See Fig. 51.
8. Press the BACK Key to return to the previous screen.
9. Press the EXIT Key to return to the Main Screen.

FIG. 50: Delete a File

FIG. 48: Files Screen

FIG. 49: Delete Files

FIG. 51: Files Deleted

USER SET UP SCREENS

READER SET UP SCREENS

Use this function to change an individual setup on the Reader. You can change the following:

- Tags Selection
- Unique Mode
- Display Time Tag
- Tag Counter Enable
- Reset Tag Counter
- Break Mode Delay
- Reader ID
- Site ID
- Continuous Tuning

These functions will be discussed in detail on the following pages.

Complete as follows:

1. Press the SETUP Key. See Fig. 55.
2. Press the UP/DOWN Arrow Keys to highlight the “Reader Setup line”. See Fig. 56.
3. Press the ENTER Key. See Fig. 56.
4. The Reader Setup Screen will appear. See Fig. 57.

FIG. 55: Main Screen

FIG. 56: User Set Up Screen

READER SET UP SCREENS
(continued)

TAGS SELECTION SCREEN

Use this function to determine which type of tags will be identified by the Reader. Complete this as follows:

1. Press the UP/DOWN Arrow Keys and select the “Tag Selection” line.
2. Press the ENTER Key and the Tags Selection Screen will appear. See Fig. 57.
3. Press the UP/DOWN Arrow Keys to highlight FDX decoding or HDX decoding. See Fig. 58.
4. Press the CHANGE Key to turn the decoding ON or OFF on the line highlighted. See Fig. 58.

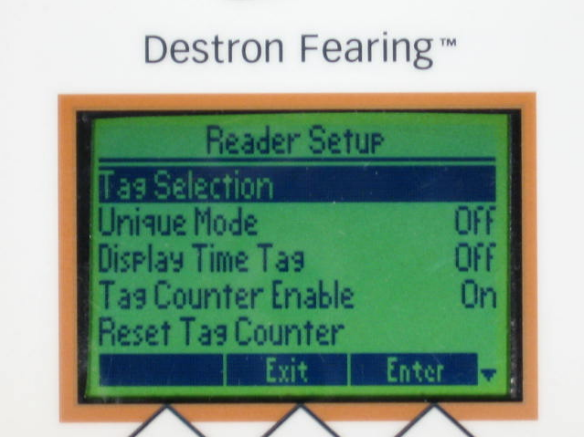

FIG. 57: Reader Set Up Screen

FIG. 58: Tag Selection Screen

READER SET UP SCREENS
(continued)

UNIQUE MODE SCREEN

Use this function to change how the unit reads a tag:

- **Last five tags:** The reader will read a tag once, and then not read that tag again until it has read 5 other tags.
- **Last tag:** The reader will read a tag once, and then not read that tag again until another tag is read.
- **Delay:** The reader will read a tag once, and then not read that tag again until the preset amount of delay time has occurred.
- **Turn it off:** The reader will read a tag continuously.

Complete this as follows from the Reader Setup Screen:

1. Press the UP/DOWN Arrow Keys until you have highlighted the "Unique Mode" line. See Fig. 59.
2. Press the CHANGE Key and the Change Value Unique Mode Screen will appear. See Fig. 59.
3. Press the UP/DOWN Arrow Keys to highlight desired setting. See Figs. 60, 61, 62, and 63.
4. Press the CONFIRM Key to lock in the new setting. See Fig. 60.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

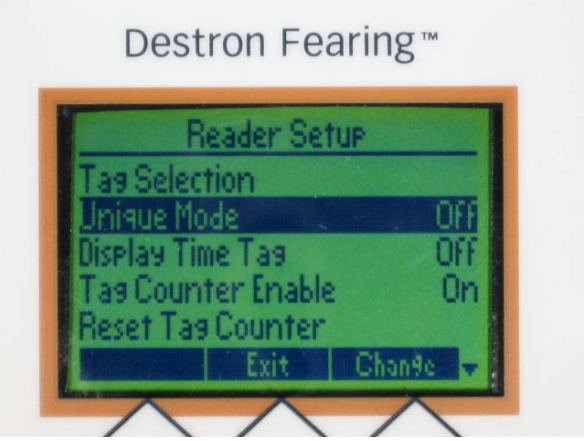

FIG. 59: Reader Set Up Screen

FIG. 60: Change Value – Unique Mode – Last Tag Screen

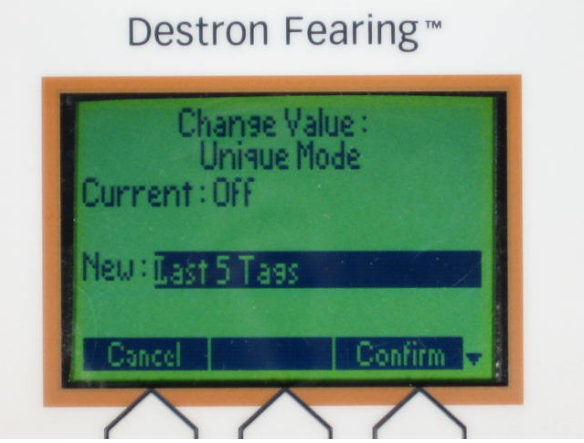

FIG. 61: Change Value Screen

READER SET UP SCREENS
(continued)

UNIQUE MODE SCREEN

Use this function to delay the Unique Mode settings and select the amount of delayed time.

Complete this as follows:

1. Press the SET DELAY Key which brings up the Unique Mode Delay Screen. See Fig. 63.
2. Press the UP/DOWN Arrow Keys to change the delay time. See Fig. 64.
3. Press the CONFIRM Key to lock in the new setting. See Fig. 64.
4. Press the BACK Key to return to the previous screen.
5. Press the EXIT Key to return to the Main Screen.

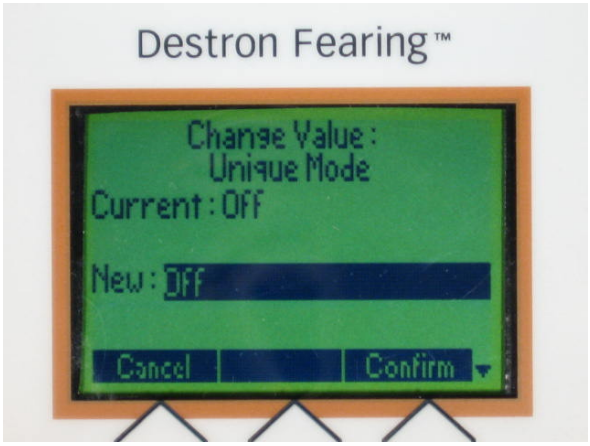

FIG: 62: Change Value Screen

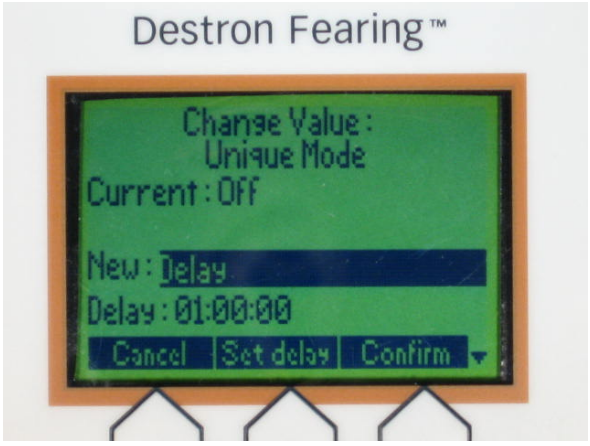

FIG. 63: Change Value – Unique Mode – Delay Screen

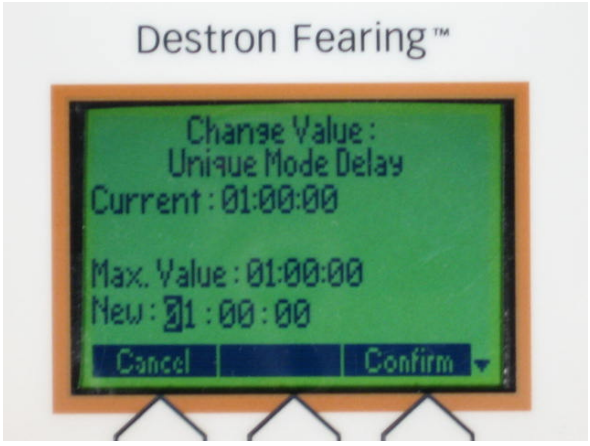

FIG: 64: Change Value Screen

READER SET UP SCREENS
(continued)

DISPLAY TIME TAG SCREENS

Use this function to turn the display time tag ON or OFF. This will append a time and date stamp to the tag ID stored in memory and/or sent out the communication port.

Complete the following steps to gain access to this line:

1. Press the UP/DOWN Arrow Keys on the Reader Setup Screen and highlight the “Display Time Tag” line. See Fig. 65.
2. Press the CHANGE Key to turn the Display Time Tag ON or OFF. See Fig. 65 - 66.
3. Press the BACK Key to return to the previous screen.
4. Press the EXIT Key to return to the Main Screen.

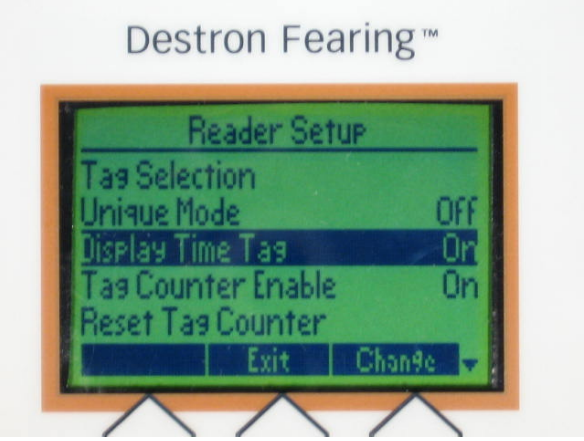

FIG. 65: Reader Setup Screen: Display Time Tag ON

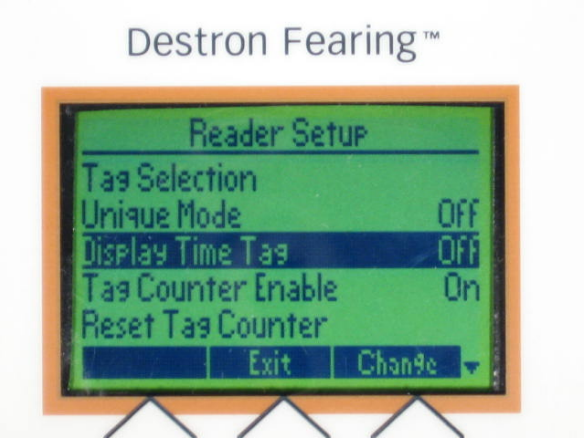

FIG. 66: Reader Setup Screen: Display Time Tag OFF

READER SET UP SCREENS
(continued)

TAG COUNTER ENABLE SCREENS

Use this function to turn the Tag Counter Enable ON or OFF. Complete the following steps from the Reader Setup Screen:

1. Press the UP/DOWN Arrow Keys on the Reader Setup Screen and highlight the “Tag Counter Enable” line. See Fig. 67.
2. Press the CHANGE Key to select ON or OFF. See Figs. 67-68.
3. Press the BACK Key to return to the previous screen.
4. Press the EXIT Key to return to the Main Screen.

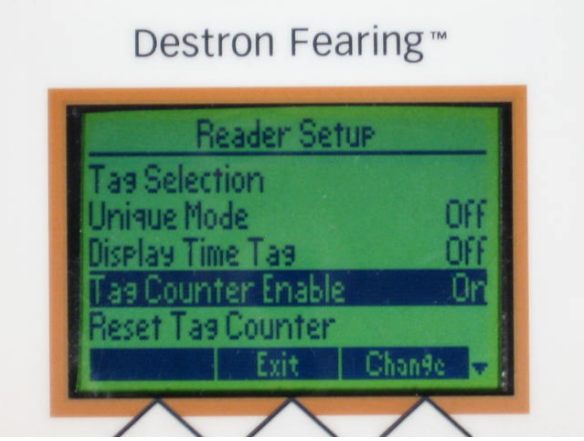

FIG. 67: Reader Setup Screen: Tag Counter Enable ON

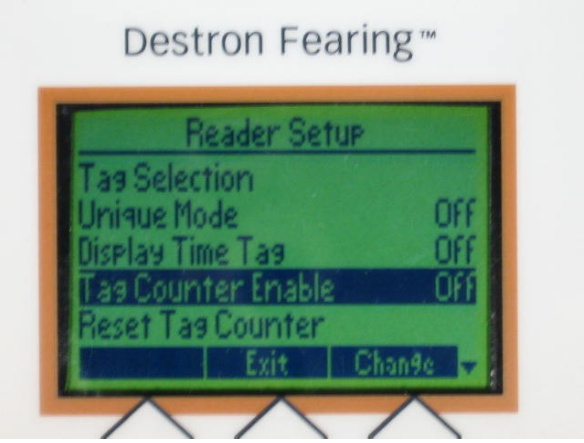

FIG. 68: Reader Setup Screen: Tag Counter Enable OFF

READER SET UP SCREENS
(continued)

RESET TAG COUNTER

Use this function to reset the tag counter. Complete the following from the Reader Setup Screen:

1. Press the UP/DOWN Arrow Keys on the Reader Setup Screen and highlight the “Reset Tag Counter line”. See Fig. 69.
2. Press the OK Key. A “Tag Counter Reset” Dialogue Box appears. See Fig. 70.
3. Press the BACK Key to return to the previous screen.
4. Press the EXIT Key to return to the Main Screen.

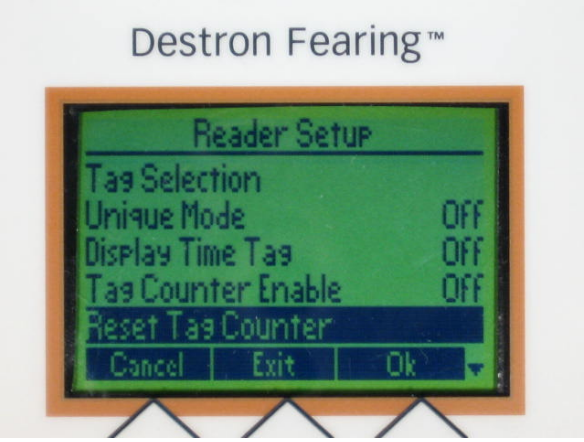

FIG. 69: Reader Setup Screen

FIG. 70: Tag Counter Reset Dialogue Box

READER SET UP SCREENS
(continued)

BREAK MODE DELAY SCREEN

Use this function to delay the Break Mode settings and select the amount of delayed time that will occur before the Reader can read another tag.

Complete this as follows:

1. Press the CHANGE Key and highlight the “Break Mode Delay” Change Value Screen. See Fig. 71.
2. Press the UP/DOWN Arrow Keys to change the delay time. See Fig. 72.
3. Press the CONFIRM Key to lock in the new settings. See Fig. 72.
4. Press the BACK Key to return to the previous screen.
5. Press the EXIT Key to return to the Main Screen.

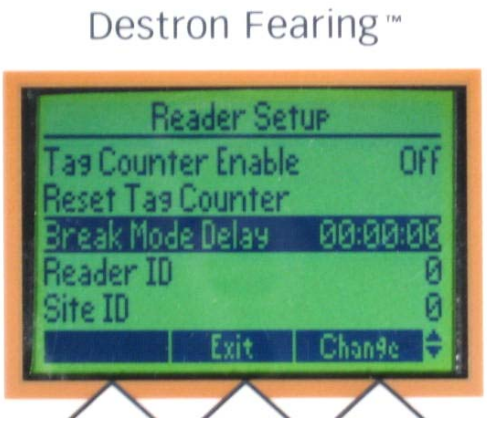

FIG. 71: Break Mode Delay Screen

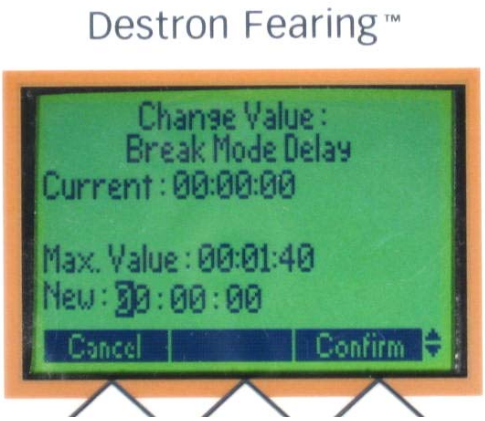

FIG. 72: Change Value Screen

READER SET UP SCREENS
(continued)

READER ID SCREEN

Use this function to change the Reader ID settings.

Complete this as follows:

1. Press the UP/DOWN Arrow Keys on the Reader Setup Screen and highlight the “Reader ID” line. See Fig. 73.
2. Press the CHANGE Key. See Fig. 73. The Reader ID Change Value Screen will appear. See Fig. 74.
3. Press the UP/DOWN Arrow Keys to change the setting. See Fig. 74.
4. Press the CONFIRM Key to lock in the new settings. See Fig. 74.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

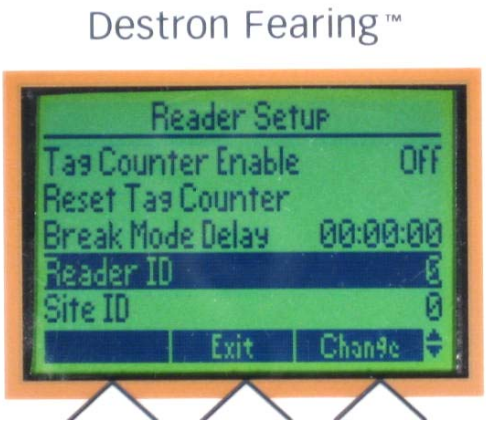

FIG. 73: Reader ID Screen

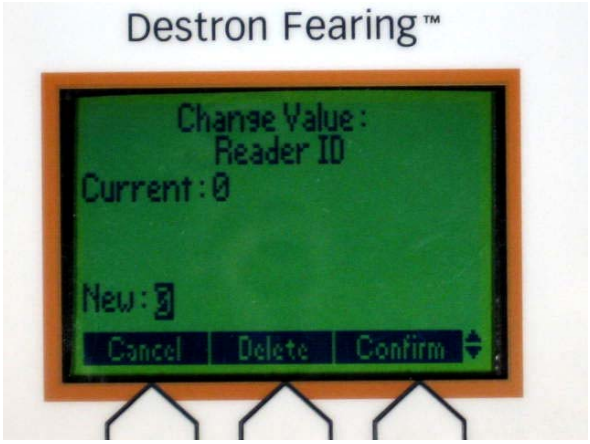

FIG. 74: Change Value Screen

READER SET UP SCREENS
(continued)

SITE ID SCREEN

Use this function to change the Site ID settings.

Complete this as follows:

1. Press the UP/DOWN Arrow Keys on the Reader Setup Screen and highlight the “Site ID” line. See Fig. 75.
2. Press the CHANGE Key. See Fig. 75. The “Reader ID” Change Value Screen will appear. See Fig. 76.
3. Press the UP/DOWN Arrow Keys to change the delay time. See Fig. 76.
4. Press the CONFIRM Key to lock in the new settings. See Fig. 76.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen

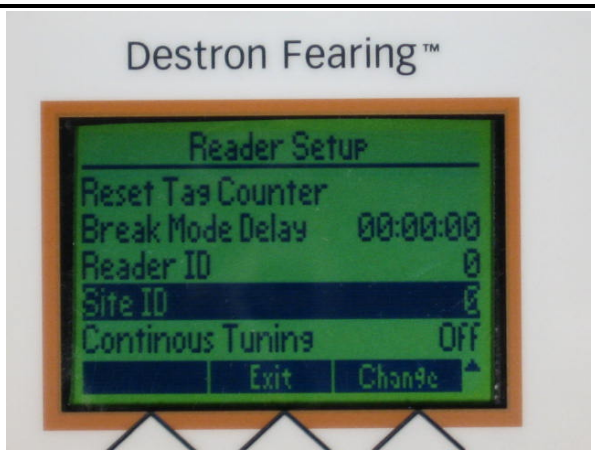

FIG. 75: Site ID Screen

FIG. 76: Change Value Screen

READER SET UP SCREENS
(continued)

CONTINUOUS TUNING SCREENS

Use this function to turn the Continuous Tuning ON or OFF. Complete the following steps from the Reader Setup Screen:

1. Press the UP/DOWN Arrow Keys on the Reader Setup Screen and highlight the “Continuous Tuning” line. See Fig. 77.
2. Press the CHANGE Key to change the setting from ON or OFF. See Figs. 77 - 78.
3. Press the BACK Key to return to the previous screen.
4. Press the EXIT Key to return to the Main Screen.

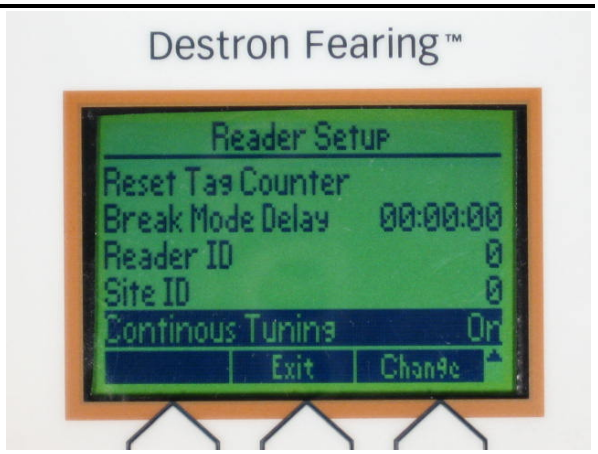

FIG. 77: Continuous Tuning Screen - ON

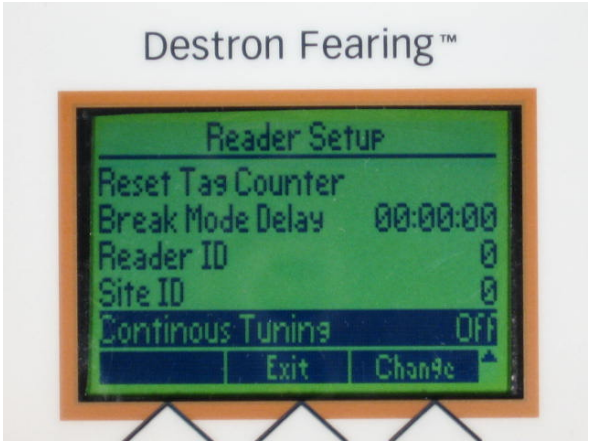

FIG. 78: Continuous Tuning Screen - OFF

USER SET UP SCREENS

COMMUNICATION SETUP SCREENS

Use this function to change the baud rate, send tag on comm and the secondary console port.

Complete this as follows:

1. Press the SETUP Key on the Main Screen.
2. Press the UP/DOWN Arrow Keys and highlight the “Communication Setup” Line. See Fig. 85.
3. Press the ENTER Key. See Fig. 86.
4. The Communications Screen will appear. The Communication Setup Screen will provide access to the Baud Rate, Send Tag, and Secondary Console Port screens. These screens will be discussed in detail on the following pages. See Fig. 86.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

FIG. 85: User Setup Screen

FIG. 86: Communications Setup Screen

COMMUNICATION SET UP SCREENS (continued)

BAUD RATE SCREEN

Use this function to change the baud rate setting.

Complete this as follows:

1. Press the UP/DOWN Arrow Keys and highlight the “Baud Rate” line. See Fig. 87.
2. Press the CHANGE Key and the “Baud Rate” Change Value Screen will appear. See Figs. 87and 88.
3. Press the UP/DOWN Arrow Key to select the desired baud rate. See Fig. 87.
4. Press the CONFIRM Key to lock in the new baud rate setting. See Fig. 87.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

FIG. 87: Communications Setup Screen

FIG. 88: Change Value – Baud Rate Screen

COMMUNICATION SET UP SCREENS (continued)

SEND TAG SCREENS

Use this function to turn the Send Tag line to ON or OFF.

Complete this as follows:

1. On the Communication Setup Screen, press the UP AND DOWN Arrow Keys to highlight the “Send Tag“ line. See Fig. 89.
2. Press the CHANGE Key and the Send Tag Change Value Screen will appear. See Fig. 90.
3. Press the UP/DOWN Arrow Keys and select from Form 1, Form 2, Form 3, or OFF.
   Form 1: The tag ID is sent out the communications port with a decimal point (i.e. 985.120123456789).

   Form 2: The decimal point is not sent (i.e. 985120123456789).

   Form 3: Is for future use, currently it is identical to form 2.

   Off: No tag numbers will be sent out the communication port. See Fig. 90.
4. Press the CONFIRM Key to lock in the new setting. See Fig. 90.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

FIG. 89: Communication Setup Screen

FIG. 90: Change Value – Send Tag Screen

COMMUNICATION SET UP SCREENS (continued)

SECONDARY CONSOLE PORT SCREENS

Use this function to select which port is used as a secondary communications port. This allows the user to have two communications devices connected to the reader at the same time.

Complete this as follows:

1. Press the UP/DOWN Arrow Keys and highlight the “Sec. Console Port” line. See Fig. 91.
2. Press the CHANGE Key and the “Sec Console Port” Change Value Screen will appear. See Fig. 91.
3. Press the UP/DOWN Arrow Keys to highlight the desired setting. Your choices are: USB, RF, RS485. See Fig. 92.
4. Press the CONFIRM Key to lock the new setting in place. See Fig. 92.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

FIG. 91: Communications Setup Screen

FIG. 92: Change Value SEC Console Port Screens

USER SET UP SCREENS

DISPLAY SCREENS

Use this function to change display settings in the Reader.

Complete this as follows:

1. Press the UP/DOWN Arrow Keys and highlight the “Display” line. See Fig. 95.
2. Press the ENTER Key and the Display Screen will appear.
3. Highlight one of these four options:
    - Tag ID Display Mode
    - Beep Sound
    - Backlight
    - Read LED Act. Time

    These functions will be discussed in detail on the following pages.
4. Press the BACK Key to return to previous screen.
5. Press the EXIT Key to return to the Main Screen.

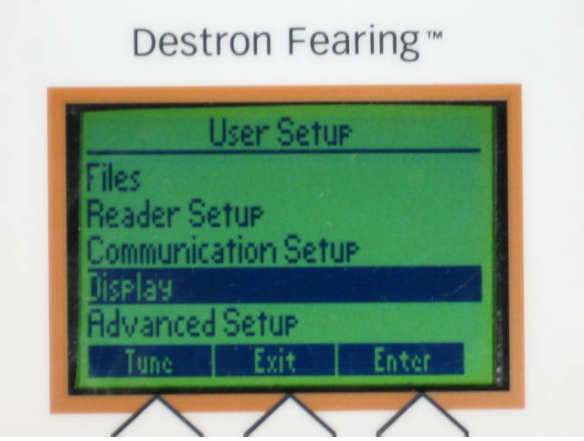

FIG. 95: User Set Up Screen

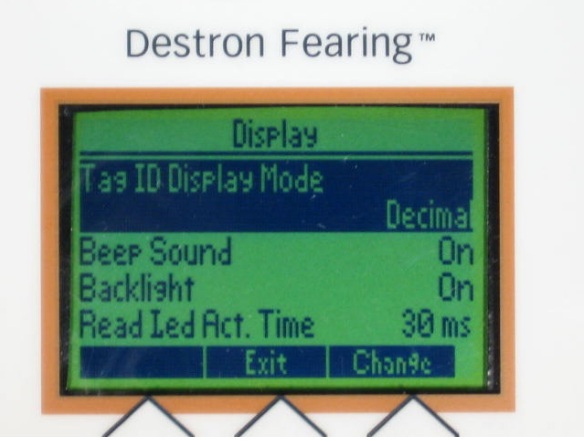

FIG. 96: Display Screen

DISPLAY SCREENS (continued)

TAG ID MODE SCREENS

Use this function to change the display from decimal to hexadecimal.

In decimal mode the tag ID is displayed and stored as a decimal value. (i.e. 985.054975585403).

In hexadecimal mode the Tag ID is displayed and stored as a hexadecimal value (i.e. 3D9.0CCCCCDC7B). A hexadecimal value is represented by numbers 0 through 9 and letter A through F – base 16).

Complete this as follows:

1. Press the UP/DOWN Arrow Keys to highlight the “Tag ID Display Mode”. See Fig. 97.
2. Press the CHANGE Key and the “Tag ID Display Mode” Change Value Screen will appear. See Figs. 97 and 98.
3. Press the UP/DOWN Arrow Keys to select decimal or hexi decimal readings. See Fig. 98.
4. Press the CONFIRM Key to lock in the new setting. See Fig. 98.
5. Press the BACK Key to return to previous screen.
6. Press the EXIT Key to return to the Main Screen.

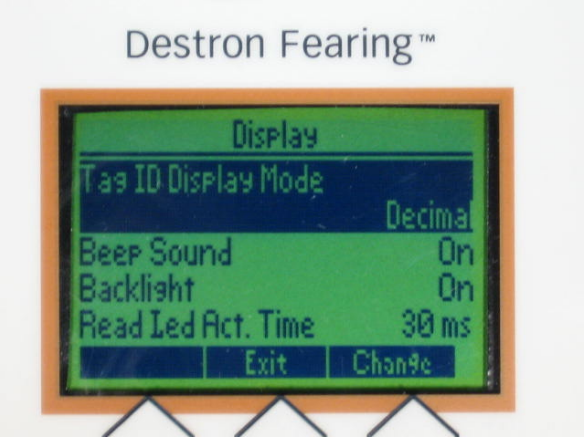

FIG. 97: Display Screen

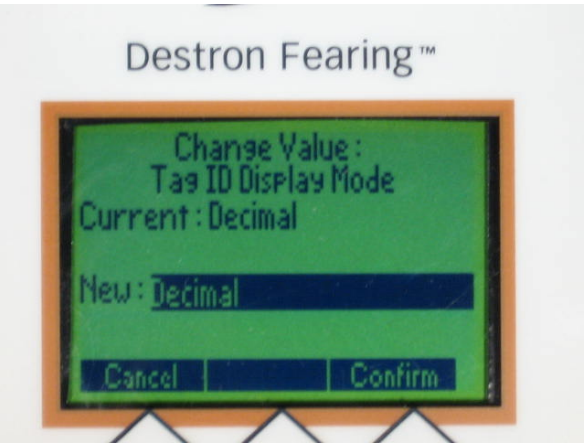

FIG. 98: Change Value ID Display Mode

DISPLAY SCREENS (continued)

BEEP SOUND SCREENS

Use this function to turn the beep sound ON or OFF in the Display Screens.

Complete this as follows:

1. Press the UP/DOWN Arrow Keys to highlight the ”Beep Sound” line on the Display Screen. See Fig. 99.
2. Press the CHANGE Key to select the OFF or ON. See Fig. 99.
3. Press the BACK Key to return to the previous screen.
4. Press the EXIT Key to return to the Main Screen.

FIG. 99: Display Screen

DISPLAY SCREENS (continued)

BACK LIGHT SCREENS

Use this function to turn the back light setting from ON to OFF.

Complete this as follows:

1. Press the UP/DOWN Arrow Keys and highlight the “Backlight” line on the Display Screen. See Fig. 100.
2. Press the CHANGE Key.
3. The Back Light Change Value Screen will appear where you have 3 options to select from: ON, SAVING or OFF. See Fig. 101. Press the UP/DOWN Arrow Keys to select the desired setting.
4. Press the CONFIRM Key to lock in the new setting. See Fig. 101.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

FIG. 100: Display Screen

FIG. 101: Change Value Back Light Screen

DISPLAY SCREENS (continued)

READ LED ACT. TIME SCREENS

Use this function to change the Read LED ACT Time.

Complete this as follows:

1. Press the UP/DOWN Arrow Keys and highlight “Read LED ACT. Time” line on the Display Screen.
2. Press the CHANGE Key. The “Read LED ACT. Time” Change Value Screen will appear. See Figs. 102 and 103.
3. Press the UP/DOWN Arrow Keys to highlight the desired setting.
4. Press the CONFIRM Key to lock in the new setting. See Fig. 103.
5. Press the BACK Key to return to the previous screen.
6. Press the EXIT Key to return to the Main Screen.

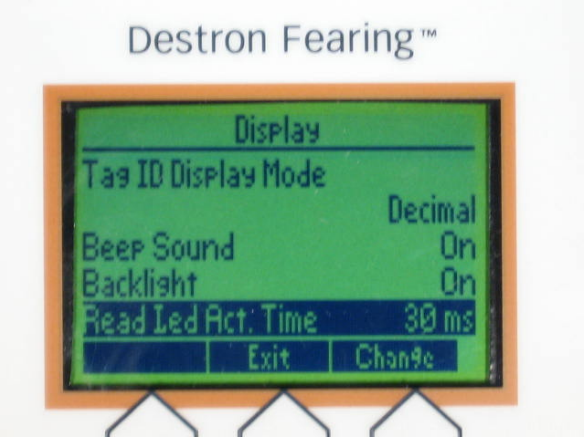

FIG. 102: Display Screen

FIG. 103: Change Value Screen

ALARMS CODE SCREENS

If an alarm occurs, the Main Screen will show a flashing alarm signal across the top of the screen. See Fig. 110.

Complete one or more of the following:

Press the ALARMS Key to view the active alarms occurring. See Figs. 110 & 111.

Press the UP/DOWN Arrow Keys to highlight an alarm. See Fig. 111.

Press the STATUS Key to view the alarm selected. See Fig. 111.

Press the OVERRIDE Key to override the alarm and return to the Scan Screen. See Fig. 111.

Manually fix the problem causing the alarm.

A complete list of alarm codes is listed on the following page.

FIG. 110: Alarm Flashing on Main Screen

FIG. 111: Alarms Occurring Screen

FIG. 112: Active Alarms Screen

ALARMS	DESCRIPTION
Lithium low	Battery voltage is under 2V.
FDXA Buffer overrun	Noise level is too high
FDXA Capture overrun	Noise level is too high
FDXB Buffer overrun	Noise level is too high
FDXB Capture overrun	Noise level is too high
AVID Buffer overrun	Noise level is too high
HDX Buffer overrun	Noise level is too high
HDX Capture overrun	Noise level is too high
No antenna connected	No antenna detected during auto-tune
Antenna Power Low	Current is lower that current alarm parameter value
Memory low	Memory used is equal or higher than 90%
Memory full	Memory used is 100%
Missing file	No file defined when writing a tag
Test Tag Failed	Test tag read back failed
RTC Comm. Failed	Clock loss (no lithium battery) or a hardware problem with RTC
High Noise	B signal is higher than noise parameter value and no B tags are detected
DSP reset	DSP reset
Synch. Parameters error	HDX is enabled on unit but is disabled on master unit Or HDX is disabled on unit but is enabled on master unit
Auto-Tune Timeout	Reader set in slave mode

Serial Port Commands

SERIAL PORT OPERATION

The Reader can be operated and configured remotely from a computer. You must:

1. Configure the Reader's COM port.

   Use the Reader's *Communications > Comm Speed* option to verify/set the baud rate.

2. Connect the Reader to the computer's COM port.

   The Reader's RS232 COM port is used when making a direct connection between the Reader and the computer. The RS485 COM port is used when making connections to Bluetooth (wireless) devices. You use a communications cable to connect the desired Reader port to your computer's COM port. Table A-1 shows the specifications for the cable used to connect the Reader to your computer.

Table A-1: COM1 Port Connections (DB9 connector)

DB9 Pin number	EIA 232 signal name	Description	Reader signal direction	PC Computer connection (9-pin)
2	RD	Receive Data	Output	2
3	TD	Transmit Data	Input	3
5	GND	Signal Ground	None	5
9	+12v	+12Vdc (Used only with custom software for Bluetooth connections)	None	9

3. Start and configure a communications software package on the computer.

   Most standard communication programs can be used, including Terminal, HyperTerminal, and ProComm. Configure the communication program as follows:

   - *Bits per second* = Match the baud rate set on the Reader
   - *Data bits* = 8
   - *Parity* = None
   - *Stop bits* = 1
   - *Flow control* = None

4. Type Reader commands to perform the desired actions.

   To verify the connection between the computer and the Reader, type *h* at the communications program and then press ENTER. If a list of available commands is displayed you know you have a working connection.

   The valid Reader commands are described in the remainder of this appendix.

GENERAL COMMAND FORMAT

The Reader commands are made of two or more characters followed by a carriage return, as illustrated in the following example:

RA1↵

Generally, the first two letters designate the command group and the remaining letters/digits designate the command parameters. The commands are not case sensitive and are echoed as they are typed. The backspace key can be used to correct an improper command.

READER PROMPT

After pressing the Enter Key on the keyboard, the Reader returns a prompt that indicates the profile number currently selected.

The following table is a list of the serial console port commands.

AU		Auto Tuning
BL	{1|0|S}	Display Backlight {1} On,{0} Off,{S} Saving
CE	{1|0}	Tags Counter {1} On,{0} Off
CO	{U|R|S}	Secondary console port {U} USB,{R} RF,{S} RS-485
CS	{bps}	Set Serial Communication Speed
DF	{H|D}	Display Tag ID {H} Hexadecimal,{D} Decimal
DT		Display Current Date and Time
DU	{HH:MM:SS}	Unique Mode Delay in Seconds
FC	{SS,NAME}	File Close and Create New {SiteID, File Name}
FD	{number|A|C}	File Download {number},{A} All,{C} Current Files
FE	{number|A|C}	File Erase {number} {A} All,{C} Current Files
LD	{1|2|3}	Read Led Act Time {1} 30ms, {2} 250ms, {3} 500ms
MB	{HH:MM:SS}	Break Mode Time in Seconds
MS	{0|A|U|I}	Store Mode {0} Off,{A} All,{U} Unique,{I} Id
MU	{5|1|0|D}	Unique Mode {5} 5 Tags,{1} 1 Tag,{0} Off,{D} Delay
RA	{1|0|Z}	Reader Active {1} On,{2} Off,{Z} Shutdown
RB	{1|0}	Reader Beeper {1} On,{0} Off
RC		Reset tag counter
RI	{0-255}	Change Reader ID
SI	{0-100}	Change Site ID

SS		Send Status and Profile Settings
ST	{1|2|3|0}	Send Tag on Com {1} Form1,{2} Form2,{3} Form3,{0} OFF
TB	{1|0}	FDXB Decoding {1} On,{0} Off
TH	{1|0}	HDX Decoding {1} On,{0} Off
TS	{1|0}	Display Timestamps {1} On,{0} Off

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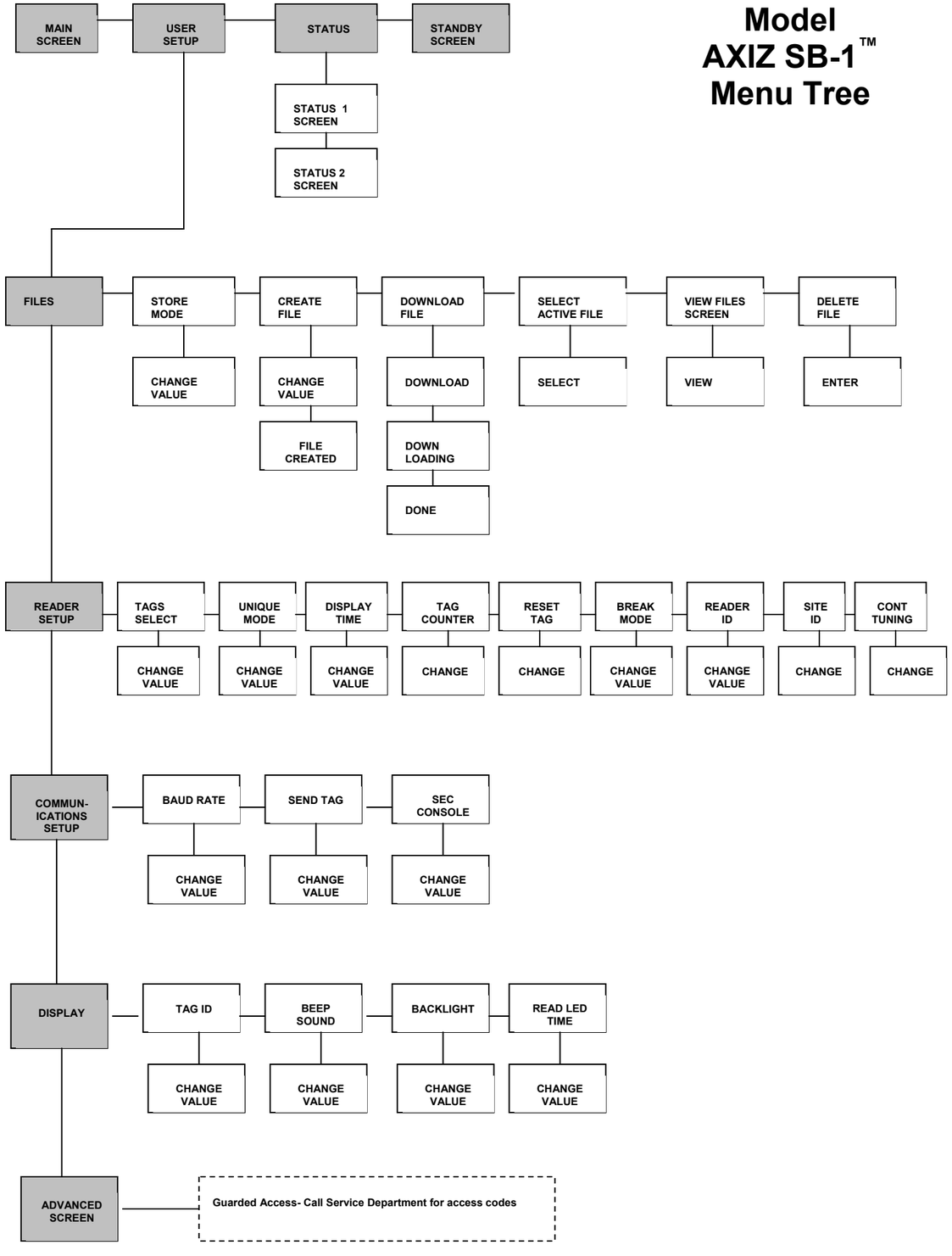
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